DEC 2 1 2006
PATENT & TRADEMARK OFFICE

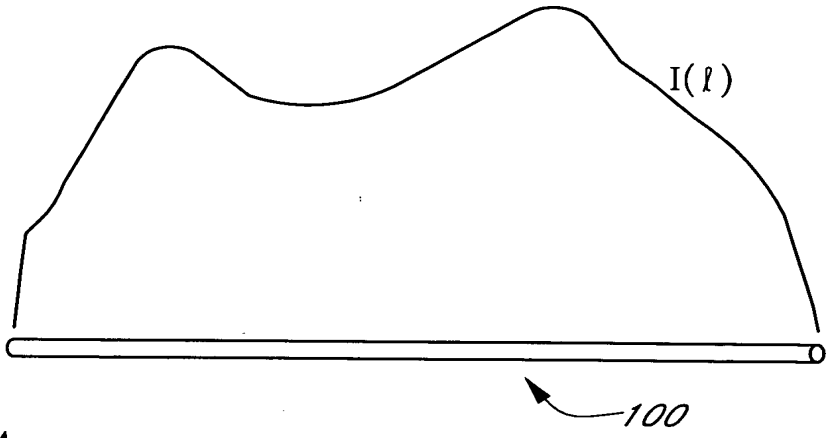


FIG. 1A
PRIOR ART

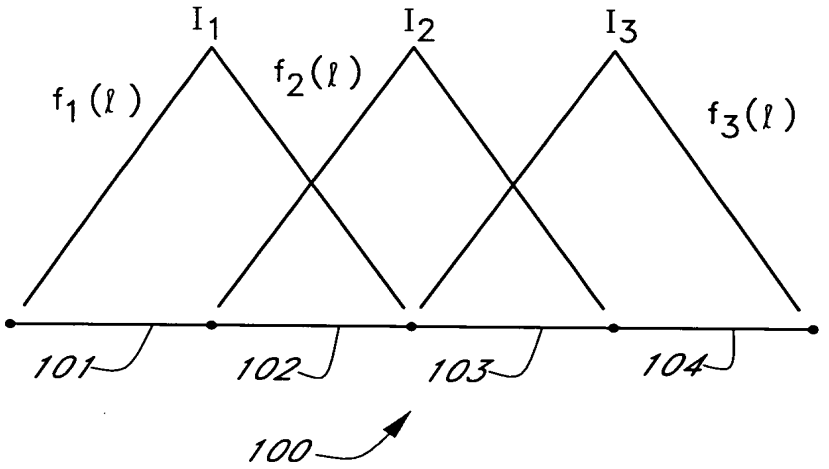


FIG. 1B
PRIOR ART

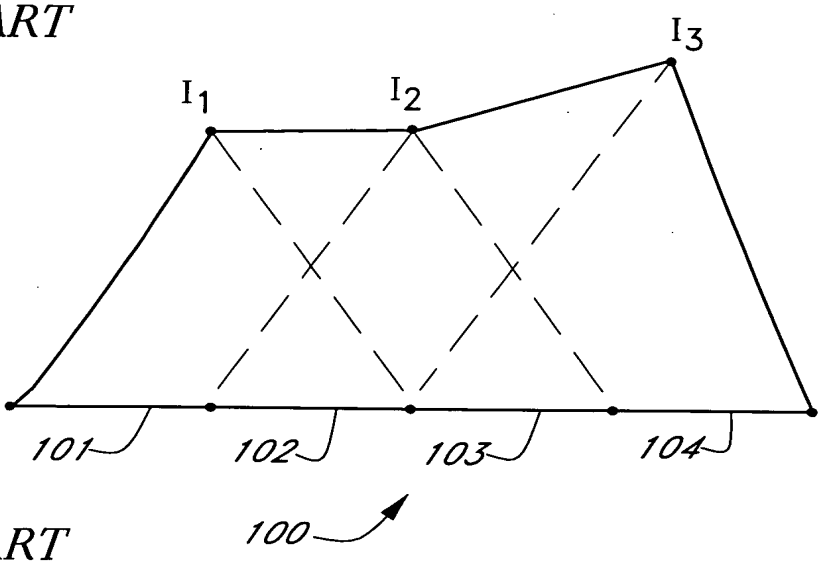


FIG. 1C
PRIOR ART

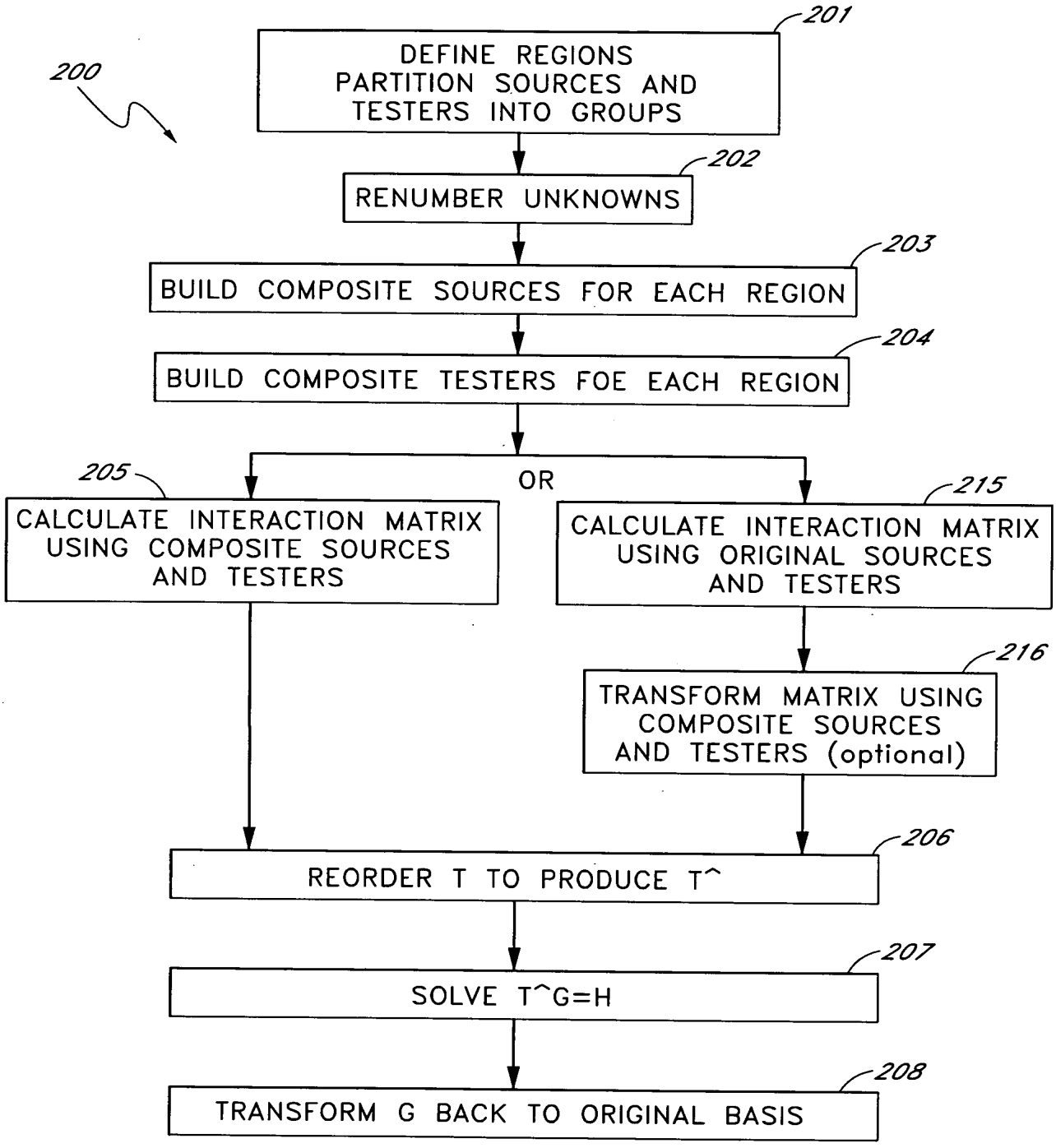

200
201
DEFINE REGIONS PARTITION SOURCES AND TESTERS INTO GROUPS
202
RENUMBER UNKNOWNS
203
BUILD COMPOSITE SOURCES FOR EACH REGION
204
BUILD COMPOSITE TESTERS FOE EACH REGION
OR
205
CALCULATE INTERACTION MATRIX USING COMPOSITE SOURCES AND TESTERS
215
CALCULATE INTERACTION MATRIX USING ORIGINAL SOURCES AND TESTERS
216
TRANSFORM MATRIX USING COMPOSITE SOURCES AND TESTERS (optional)
206
REORDER T TO PRODUCE T^
207
SOLVE T^G=H
208
TRANSFORM G BACK TO ORIGINAL BASIS

FIG. 2

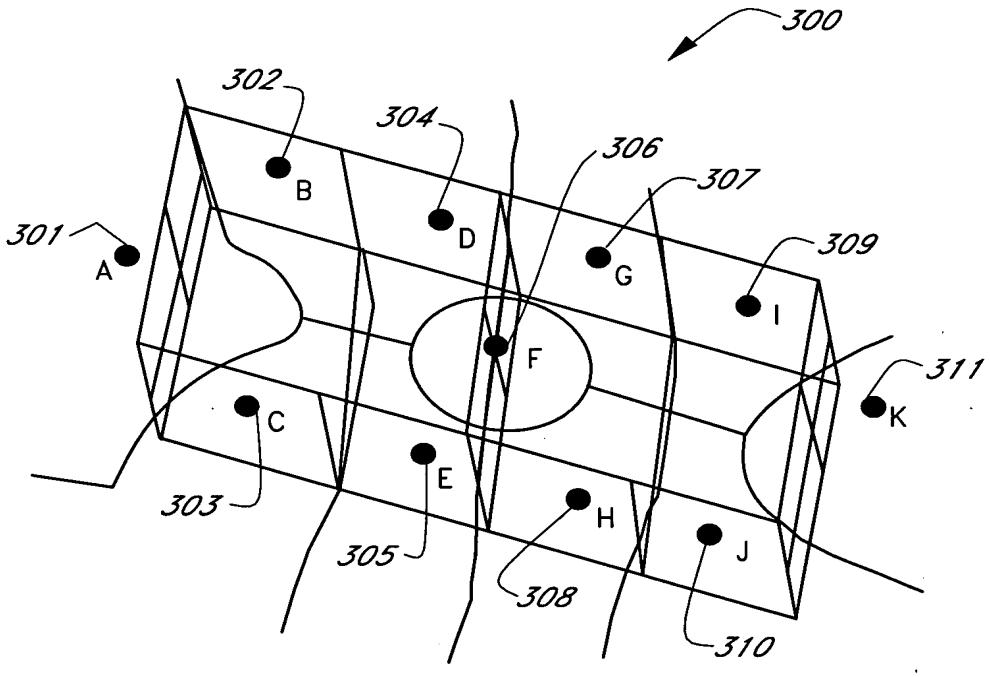


FIG. 3

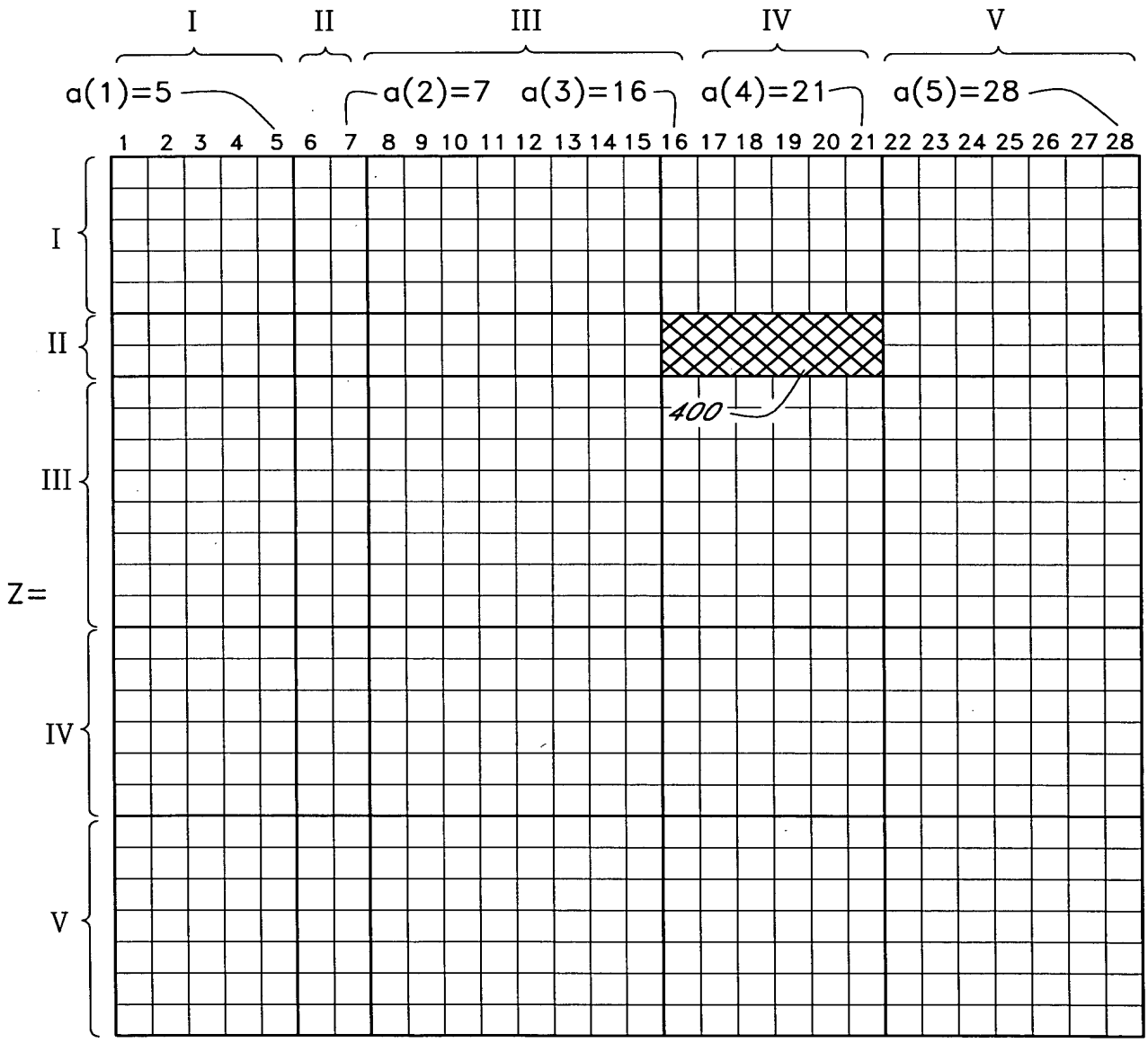

I
II
III
IV
V
a(1)=5
a(2)=7
a(3)=16
a(4)=21
a(5)=28
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Z=
400
400

FIG. 4

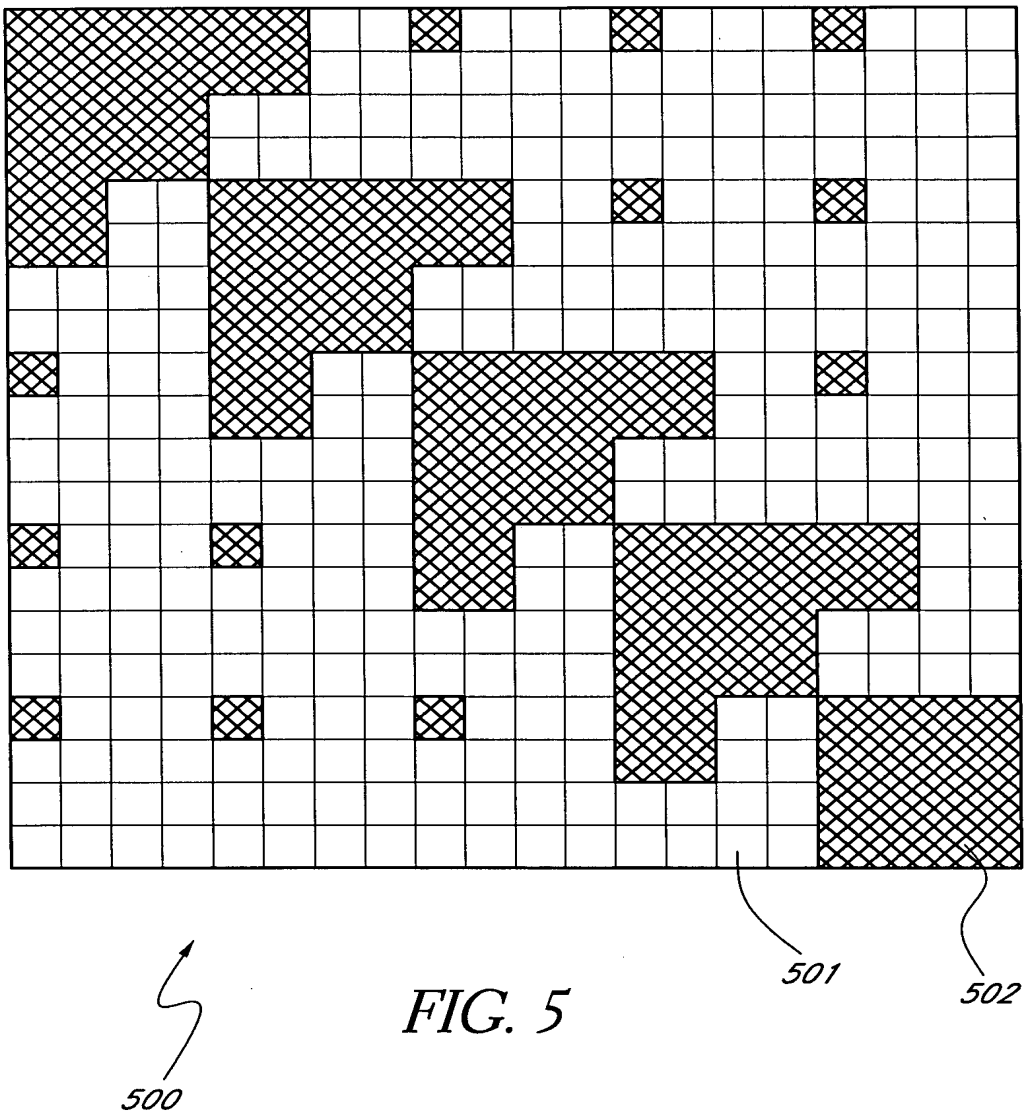


FIG. 5

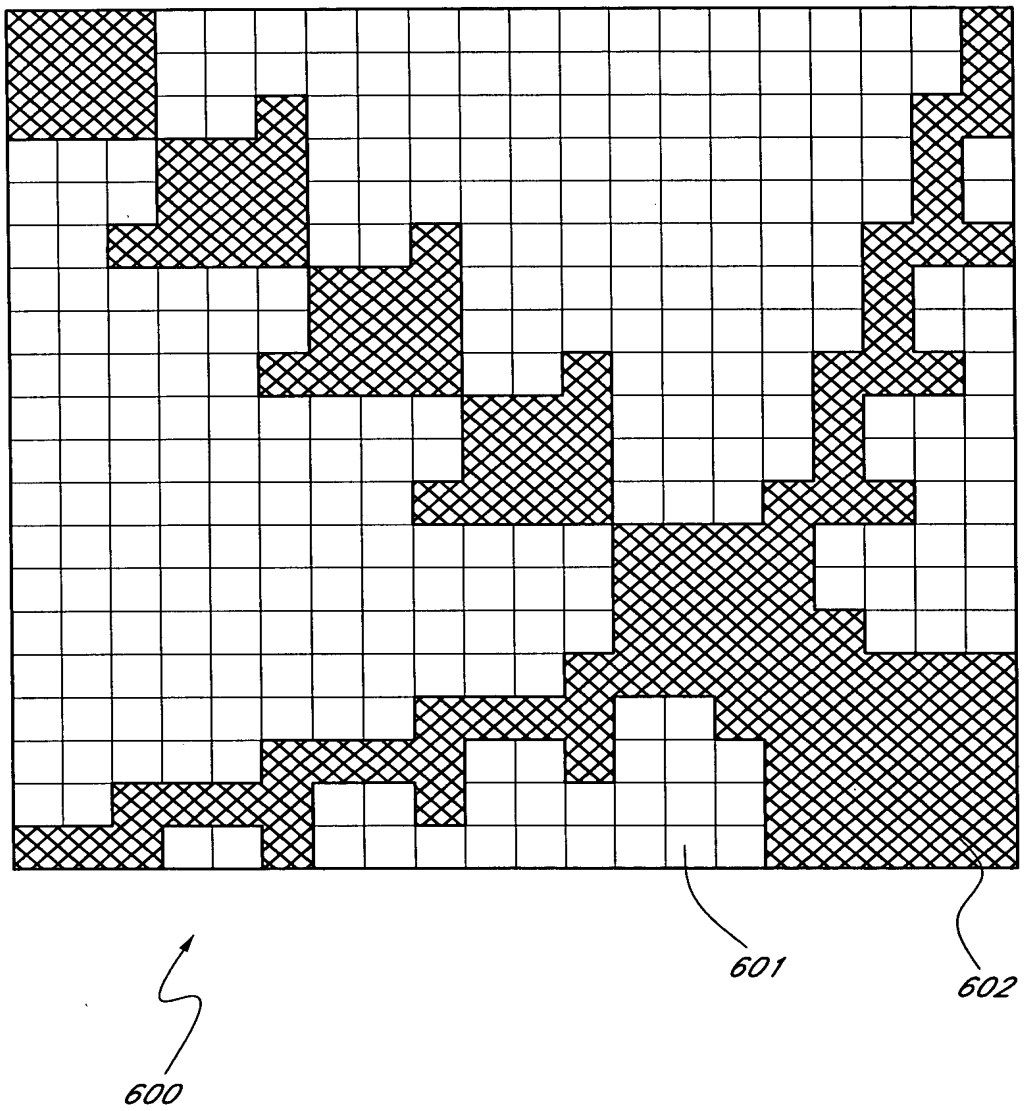


FIG. 6

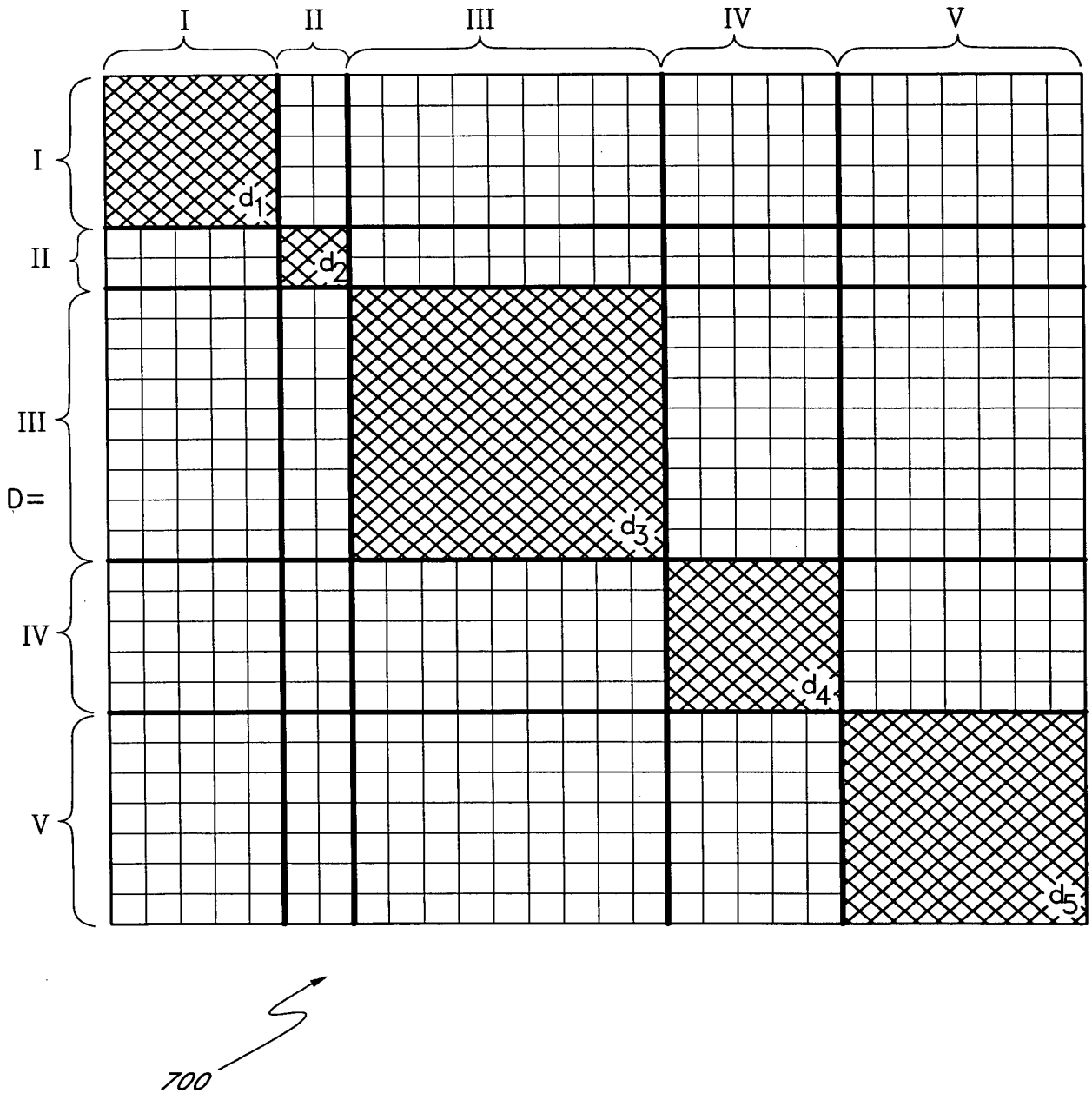


FIG. 7

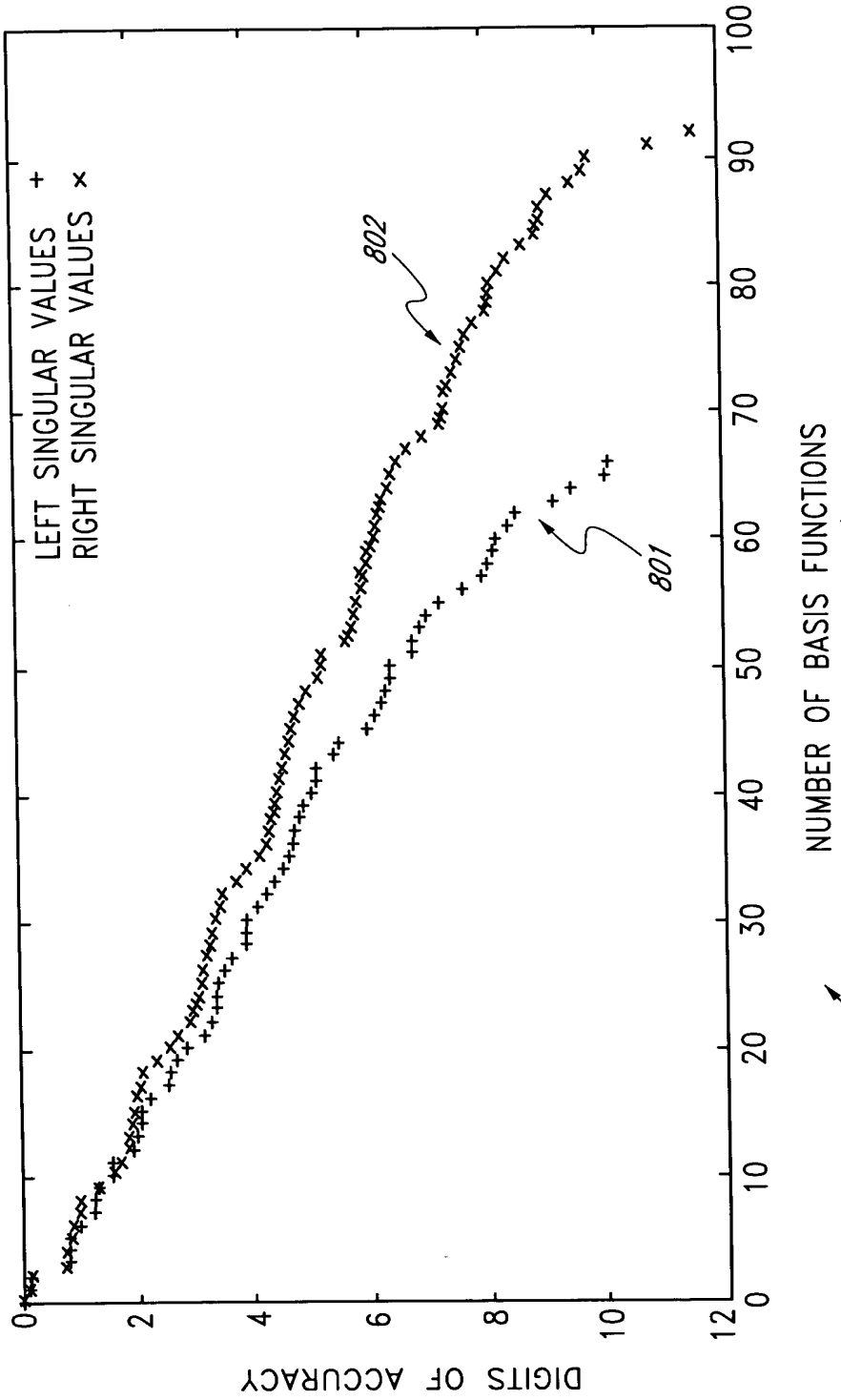

LEFT SINGULAR VALUES +
RIGHT SINGULAR VALUES ×
802
801
800
DIGITS OF ACCURACY
NUMBER OF BASIS FUNCTIONS
0
2
4
6
8
10
12
0
10
20
30
40
50
60
70
80
90
100

FIG. 8

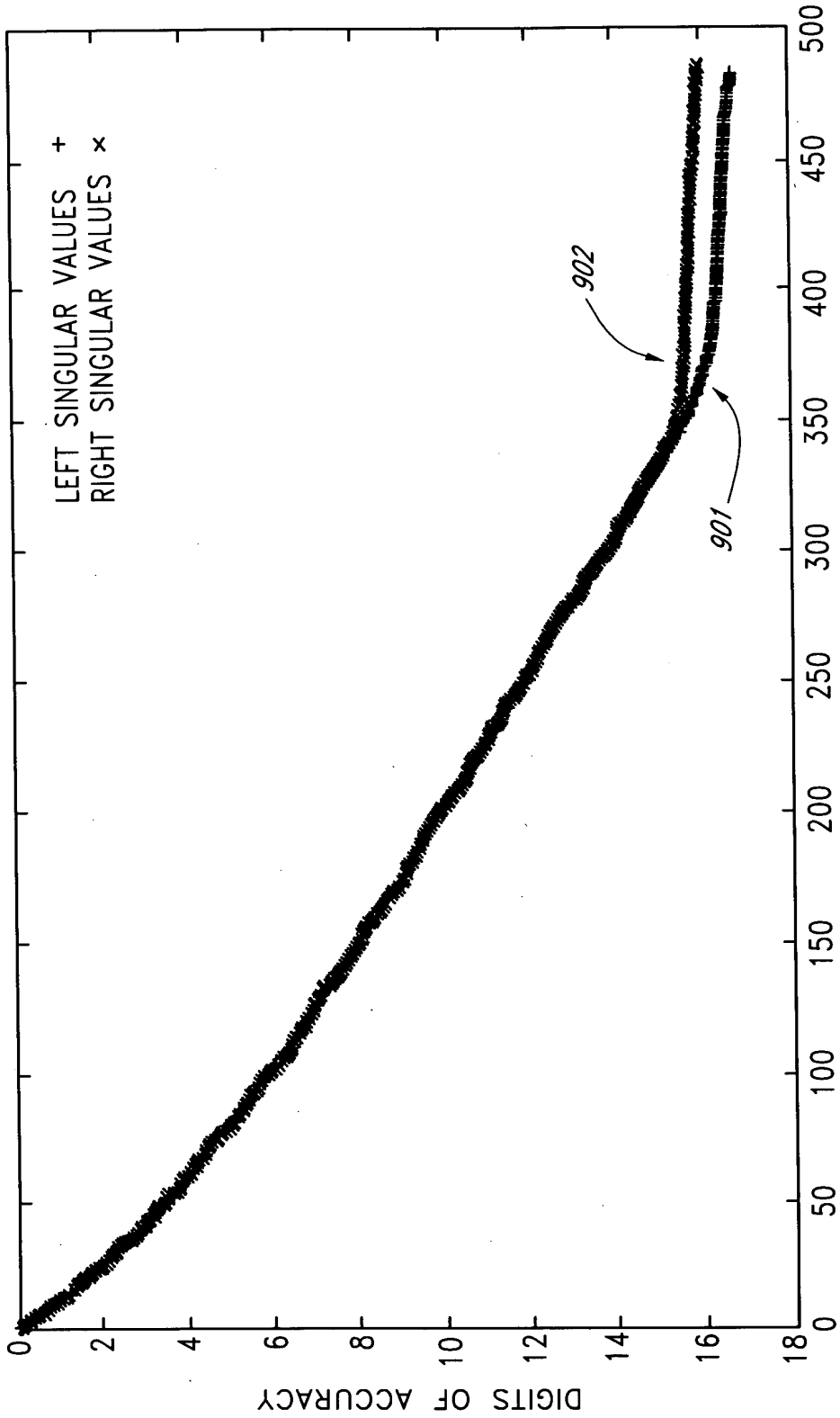
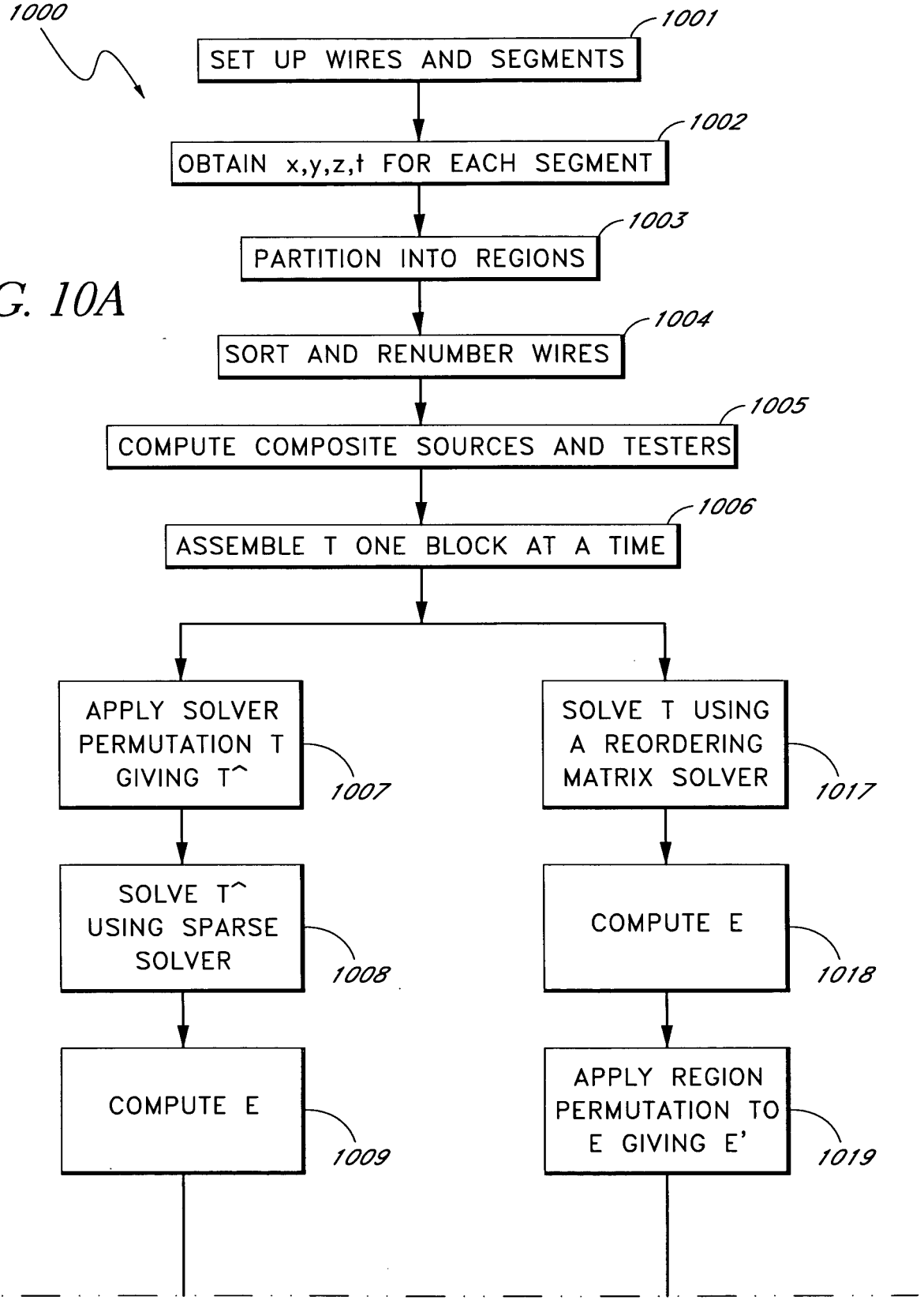

LEFT SINGULAR VALUES +
RIGHT SINGULAR VALUES x
902
901
900
DIGITS OF ACCURACY
NUMBER OF BASIS FUNCTIONS
0
2
4
6
8
10
12
14
16
18
0
50
100
150
200
250
300
350
400
450
500

FIG. 9

FIG. 10A


1000
1001
SET UP WIRES AND SEGMENTS
1002
OBTAIN x,y,z,t FOR EACH SEGMENT
1003
PARTITION INTO REGIONS
1004
SORT AND RENUMBER WIRES
1005
COMPUTE COMPOSITE SOURCES AND TESTERS
1006
ASSEMBLE T ONE BLOCK AT A TIME
APPLY SOLVER PERMUTATION T GIVING T^
1007
SOLVE T^ USING SPARSE SOLVER
1008
COMPUTE E
1009
SOLVE T USING A REORDERING MATRIX SOLVER
1017
COMPUTE E
1018
APPLY REGION PERMUTATION TO E GIVING E'
1019

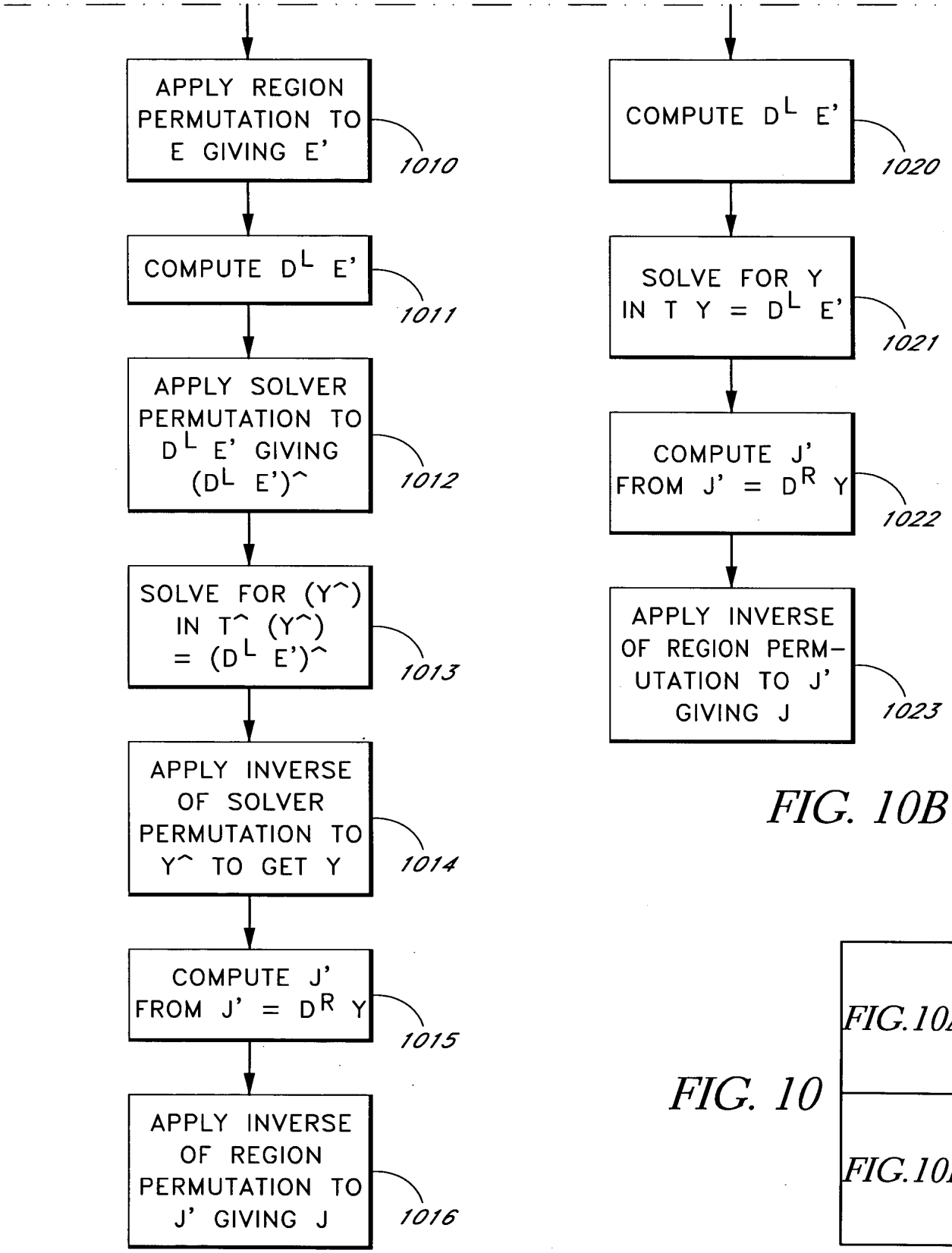
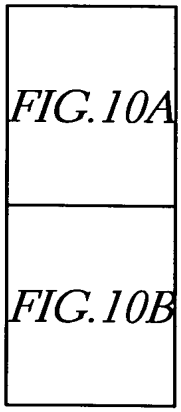


FIG. 10B

FIG. 10



BEST AVAILABLE COPY

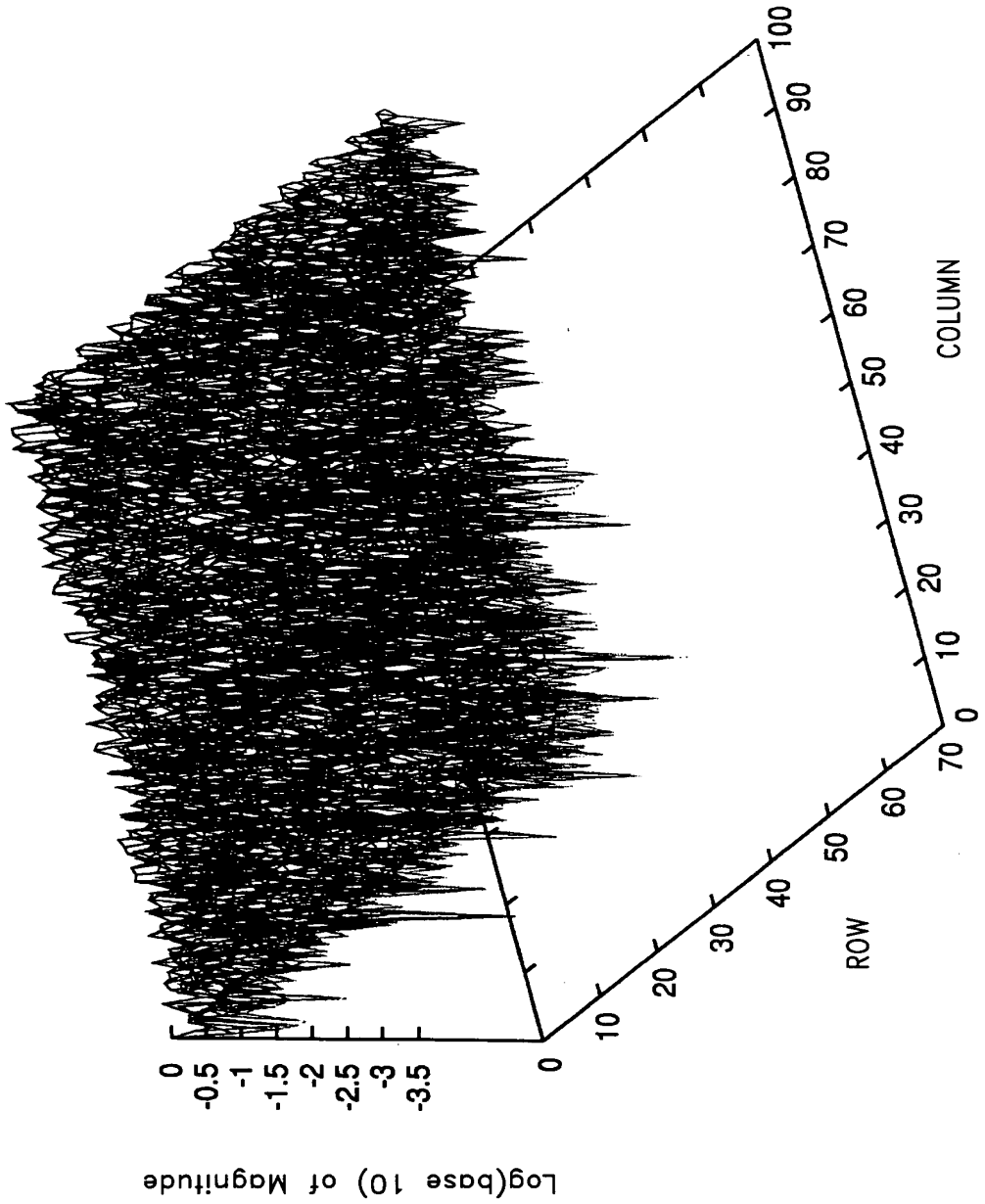


FIG.11

Replacement Sheet 13/15 BEST AVAILABLE COPY

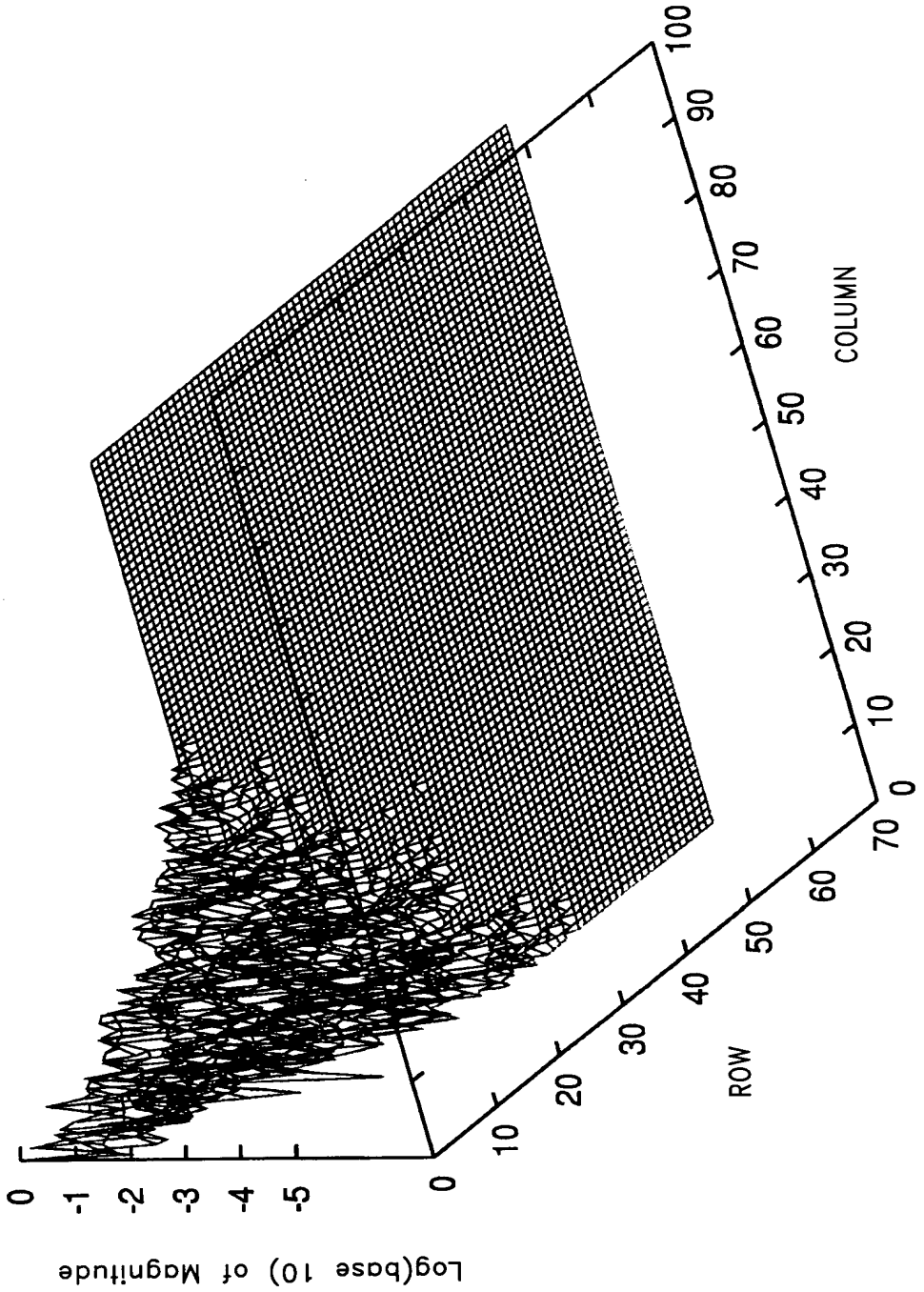
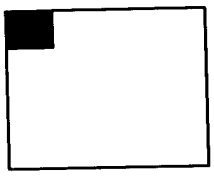
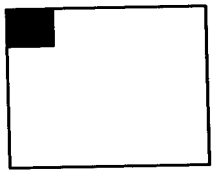
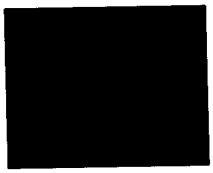


FIG.12

$\tilde{A}_{i,j} =$  $i>j$

$B_{i,j} =$  $i<j$

$B^{-1}_{j,j} =$ 

$A_{i,j} = \tilde{A}_{i,j} B^{-1}_{j,j}$:

$A_{i,k} B_{k,j}$:

$i<k \quad k<j$

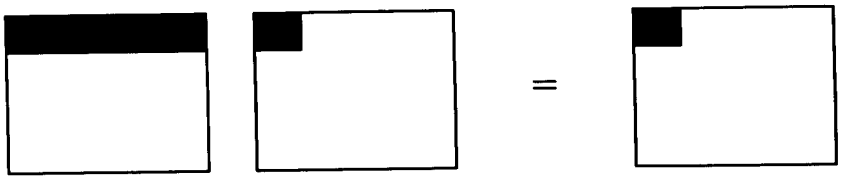


FIG. 13

Replacement Sheet

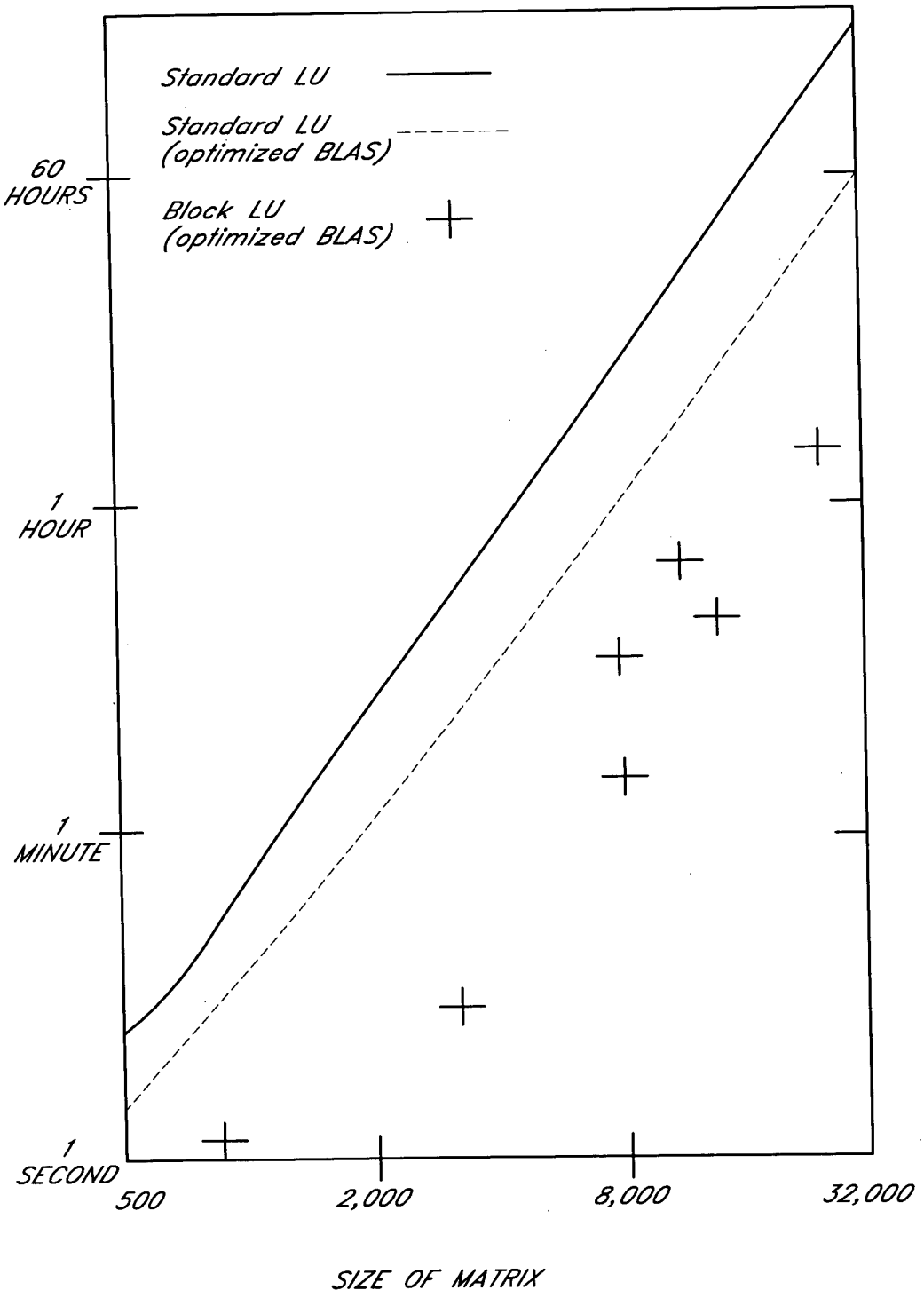


FIG. 14